WHAT IS CLAIMED IS:

1. An organism characteristic data acquiring apparatus, comprising:

a sampling section for sampling a partial image of a portion of an organism;

a detection section for detecting, every time a partial image is sampled by said sampling section, a relative positional relationship between the partial image and one of other partial images sampled already;

an extraction section for extracting, every time a partial image is sampled by said sampling section, characteristic portion data including characteristic information unique to the organism portion from the partial image; and

a synthesis section for synthesizing, every time a partial image is sampled by said sampling section, the characteristic portion data of the partial image extracted by said extraction section and characteristic portion data of the other partial image based on the relative positional relationship of the partial image detected by said detection section and outputting a result of the synthesis as organism characteristic data of the portion of the organism.

2. The organism characteristic data acquiring apparatus as claimed in claim 1, wherein said sampling section samples a partial image of a pattern formed from ridge of the portion of the organism.

3. The organism characteristic data acquiring apparatus as claimed in claim 2, wherein said extraction section extracts, as the characteristic portion data, information regarding a characteristic point of the ridge.

4. The organism characteristic data acquiring apparatus as claimed in claim 3, wherein said extraction section extracts, as the information regarding a characteristic point of the ridge, at least one of a position, a type and a direction of the characteristic point.

5. The organism characteristic data acquiring apparatus as claimed in claim 3, wherein said extraction section extracts, as the characteristic portion data, a position of a sweat gland which exists on the ridge.

6. The organism characteristic data acquiring apparatus as claimed in claim 3, wherein said extraction section extracts, as the characteristic portion data, a number of sweat glands which exist between the

characteristic points on the ridge.

7. The organism characteristic data acquiring apparatus as claimed in claim 3, wherein said extraction section extracts, as the characteristic portion data, a position of a ridge end which is at an end of the partial image.

8. The organism characteristic data acquiring apparatus as claimed in claim 7, wherein said extraction section extracts, as the characteristic portion data, information of a connectional relationship between the characteristic point and the ridge end.

9. An organism characteristic data acquiring apparatus, comprising:

a sampling section for sampling a partial image of a pattern formed from a ridge on a portion of an organism;

a detection section for detecting, every time a partial image is sampled by said sampling section, a relative positional relationship between the partial image and one of other partial images sampled already;

an extraction section for extracting, every time a partial image is sampled by said sampling section, ridge structure data including characteristic information unique to the organism portion from the partial image; and

a synthesis section for synthesizing, every time a partial image is sampled by said sampling section, the ridge structure data of the partial image extracted by said extraction section and ridge structure data of the other partial image based on the relative positional relationship of the partial image detected by said detection section and outputting a result of the synthesis as organism characteristic data of the portion of the organism.

10. The organism characteristic data acquiring apparatus as claimed in claim 9, wherein said extraction section extracts, as the ridge structure data, a skeleton line image obtained by thinning the image of the ridge.

11. The organism characteristic data acquiring apparatus as claimed in claim 9, wherein said extraction section extracts, as the ridge structure data, a binary image obtained by binarizing the image of the ridge.

12. The organism characteristic data acquiring apparatus as claimed in claim 2, wherein said detection section detects, as the relative positional relationship, a positional relationship of superposition between the partial image and the other partial image such that ridges same as each other in the partial image and the other partial image are smoothly connected to each other.

13. The organism characteristic data acquiring apparatus as claimed in claim 9, wherein said detection section detects, as the relative positional relationship, a positional relationship of superposition between the partial image and the other partial image such that ridges same as each other in the partial image and the other partial image are smoothly connected to each other.

14. The organism characteristic data acquiring apparatus as claimed in claim 2, wherein said detection section detects, as the relative positional relationship, a corresponding relationship of the ridges same as each other in the partial image and the other partial image.

15. The organism characteristic data acquiring apparatus as claimed in claim 9, wherein said detection section detects, as the relative positional relationship, a corresponding relationship of the ridges same as each other in the partial image and the other partial image.

16. The organism characteristic data acquiring apparatus as claimed in claim 1, wherein said sampling section samples the partial image by replacing the organism portion on a sampling face by a plural number of times for sampling a partial image, and wherein

characteristic portion data regarding a partial image, having an area which has a side shared by or overlaps with at least one of the other partial images, from among a plurality of partial images sampled by said sampling section is used as an object of the synthesizing process by said synthesis section.

17. The organism characteristic data acquiring apparatus as claimed in claim 9, wherein said sampling section samples the partial image by replacing the organism portion on a sampling face by a plural number of times for sampling a partial image, and wherein

characteristic portion data regarding a partial image, having an area which has a side shared by or overlaps with at least one of the other partial images, from among a plurality of partial images sampled by said sampling section is used as an object of the synthesizing process by said synthesis section.

18. The organism characteristic data acquiring apparatus as claimed in claim 1, wherein said sampling section samples the partial image while the organism portion is relatively moved with respect to a sampling face for sampling a partial image, and wherein

characteristic portion data regarding a partial image, having an area which has a side shared by or overlaps with at least one of the other partial images, from among

a plurality of partial images sampled by said sampling section is used as an object of the synthesizing process by said synthesis section.

19. The organism characteristic data acquiring apparatus as claimed in claim 9, wherein said sampling section samples the partial image while the organism portion is relatively moved with respect to a sampling face for sampling a partial image, and wherein

characteristic portion data regarding a partial image, having an area which has a side shared by or overlaps with at least one of the other partial images, from among a plurality of partial images sampled by said sampling section is used as an object of the synthesizing process by said synthesis section.

20. An authentication apparatus, comprising:

a sampling section for sampling a partial image of a portion of an organism of an object person of authentication;

a detection section for detecting, every time a partial image is sampled by said sampling section, a relative positional relationship between the partial image and one of other partial images sampled already;

an extraction section for extracting, every time a partial image is sampled by said sampling section, characteristic portion data including characteristic

information unique to the organism portion from the partial image;

a synthesis section for synthesizing, every time a partial image is sampled by said sampling section, the characteristic portion data of the partial image extracted by said extraction section and characteristic portion data of the other partial image based on the relative positional relationship of the partial image detected by said detection section and outputting a result of the synthesis as organism characteristic data of the portion of the organism; and

a collation section for executing a collation process using the organism characteristic data from said synthesis section in order to perform personal identification of the object person of authentication.

21. An authentication apparatus, comprising:

a sampling section for sampling a partial image of a pattern formed from a ridge on a portion of an organism of an object person of authentication;

a detection section for detecting, every time a partial image is sampled by said sampling section, a relative positional relationship between the partial image and one of other partial images sampled already;

a ridge structure data extraction section for extracting, every time a partial image is sampled by said sampling section, ridge structure data including

characteristic information unique to the organism portion from the partial image;

a synthesis section for synthesizing, every time a partial image is sampled by said sampling section, the ridge structure data of the partial image extracted by said ridge structure data extraction section and ridge structure data of the other partial image based on the relative positional relationship of the partial image detected by said detection section and outputting a result of the synthesis;

a characteristic data extraction section for extracting characteristic data unique to the organism portion from the result of the synthesis outputted from said synthesis section; and

a collation section for executing a collation process using the characteristic data extracted by said characteristic data extraction section in order to perform personal identification of the object person of authentication.

22. An organism characteristic data acquiring method, comprising:

a sampling step of sampling a partial image of a portion of an organism;

a detection step of detecting, every time a partial image is sampled at the sampling step, a relative positional relationship between the partial image and one of other

partial images sampled already;

an extraction step of extracting, every time a partial image is sampled at the sampling step, characteristic portion data including characteristic information unique to the organism portion from the partial image; and

a synthesis step of synthesizing, every time a partial image is sampled at the sampling step, the characteristic portion data of the partial image extracted at the extraction step and characteristic portion data of the other partial image based on the relative positional relationship of the partial image detected at the detection step and outputting a result of the synthesis as organism characteristic data of the portion of the organism.

23. An organism characteristic data acquiring method, comprising:

a sampling step of sampling a partial image of a pattern formed from a ridge on a portion of an organism;

a detection step of detecting, every time a partial image is sampled at the sampling step, a relative positional relationship between the partial image and one of other partial images sampled already;

an extraction step of extracting, every time a partial image is sampled at the sampling step, ridge structure data including characteristic information unique to the organism portion from the partial image;

and

a synthesis step of synthesizing, every time a partial image is sampled at the sampling step, the ridge structure data of the partial image extracted at the extraction step and ridge structure data of the other partial image based on the relative positional relationship of the partial image detected at the detection step and outputting a result of the synthesis as organism characteristic data of the portion of the organism.

24. An organism characteristic data acquiring program which causes a computer to function as:

a detection section for detecting, every time a partial image is sampled by a sampling section for sampling a partial image of a portion of an organism, a relative positional relationship between the partial image and one of other partial images sampled already;

an extraction section for extracting, every time a partial image is sampled by said sampling section, characteristic portion data including characteristic information unique to the organism portion from the partial image; and

a synthesis section for synthesizing, every time a partial image is sampled by said sampling section, the characteristic portion data of the partial image extracted by said extraction section and characteristic portion data of the other partial image based on the relative positional

relationship of the partial image detected by said detection section and outputting a result of the synthesis as organism characteristic data of the portion of the organism.

25. An organism characteristic data acquiring program which causes a computer to function as:

a detection section for detecting, every time a partial image is sampled by a sampling section for sampling a partial image of a pattern formed from a ridge on a portion of an organism, a relative positional relationship between the partial image and one of other partial images sampled already;

an extraction section for extracting, every time a partial image is sampled by said sampling section, ridge structure data including characteristic information unique to the organism portion from the partial image; and

a synthesis section for synthesizing, every time a partial image is sampled by said sampling section, the ridge structure data of the partial image extracted by said extraction section and ridge structure data of the other partial image based on the relative positional relationship of the partial image detected by said detection section and outputting a result of the synthesis as organism characteristic data of the portion of the organism.

26. A computer-readable recording medium on which an organism characteristic data acquiring program is recorded, said program causing a computer to function as:

a detection section for detecting, every time a partial image is sampled by a sampling section for sampling a partial image of a portion of an organism, a relative positional relationship between the partial image and one of other partial images sampled already;

an extraction section for extracting, every time a partial image is sampled by said sampling section, characteristic portion data including characteristic information unique to the organism portion from the partial image; and

a synthesis section for synthesizing, every time a partial image is sampled by said sampling section, the characteristic portion data of the partial image extracted by said extraction section and characteristic portion data of the other partial image based on the relative positional relationship of the partial image detected by said detection section and outputting a result of the synthesis as organism characteristic data of the portion of the organism.

27. A computer-readable recording medium on which an organism characteristic data acquiring program is recorded, said program causing a computer to function as:

a detection section for detecting, every time a

partial image is sampled by a sampling section for sampling a partial image of a pattern formed from a ridge on a portion of an organism, a relative positional relationship between the partial image and one of other partial images sampled already;

an extraction section for extracting, every time a partial image is sampled by said sampling section, ridge structure data including characteristic information unique to the organism portion from the partial image; and

a synthesis section for synthesizing, every time a partial image is sampled by said sampling section, the ridge structure data of the partial image extracted by said extraction section and ridge structure data of the other partial image based on the relative positional relationship of the partial image detected by said detection section and outputting a result of the synthesis as organism characteristic data of the portion of the organism.